Benefits

Vermicompost is more nutrient-rich than other composting methods. It also contains worm mucus, which prevents nutrients from washing away, and holds moisture better than than plain soil. Vermicompost can be used to make compost tea, which can be used as a fertilizer.

Other benefits include:

- Improved physical structure
- Soil enriched in micro-organisms
- More plant hormones and enzymes
- Deep-burrowing earthworms
- Improved water holding capacity
- Enhanced germination, plant growth and crop yield
- Improved root growth and structure

City of Middletown Pilot Vermicomposting Program

This program is possible because of a grant from the Rockfall Foundation and the State of Connecticut Dept. of Environmental Protection. It started in 2002. In an effort to increase recycling efforts, the City initiated a small-scale institutional food waste vermicomposting project. This project will take food scraps from local dining halls and feed them to the worms to compost them. A greenhouse was built to provide a stable environment for the worms.

Benefits of this program include:

- Reduction of wet, high-nitrogen waste being sent for disposal
- Reduction of air admissions and ash disposal
- Reduction of solid-waste disposal costs for participating facility
- Increase in local and state recycling

Kim O'Rourke – Recycling Coordinator
245 deKoven Dr.
Middletown, CT 06457
kim.orourke@cityofmiddletown.com
860.344.3526

Vermicomposting

A guide to worm composting

City of Middletown

Vermicomposting:
What is it?

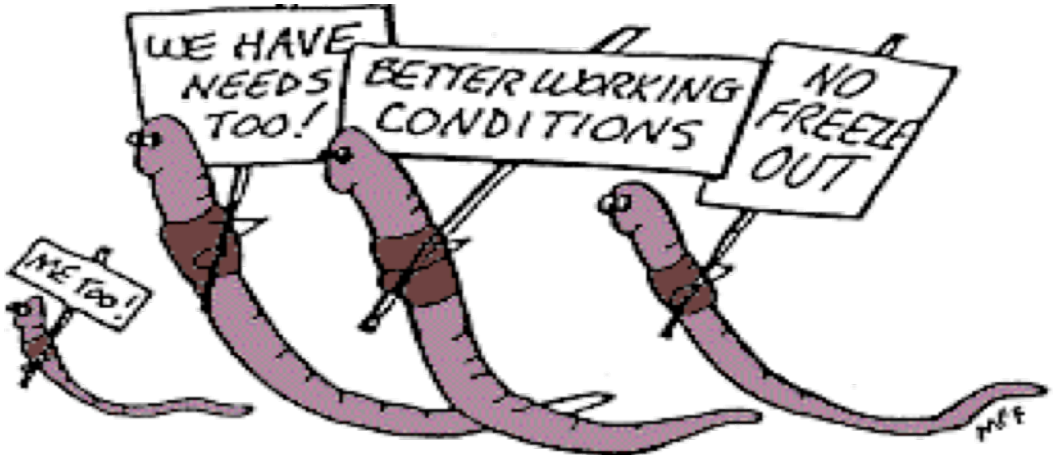
Vermicomposting is the breakdown of organic matter by certain species of earthworms. Red Wigglers or red worms are most often used in vermicomposting. These worms are available from nursery mail-order suppliers or fishing stores. Small-scale vermicompost may then be turned into high-quality soil.

Bins

For small-scale vermicomposting, a variety of bins are available. If constructing your own bin, plastic or wood is recommended, but plastic requires more drainage. We'd also recommend against pressure-treated wood. All bins should have holes in the sides for airflow and a spout or holes in the bottom to drain into a collection tray.

Here are some additional resources for more information about vermicomposting bins:

- www.wormwoman.com
- www.happydranch.com
- www.mastercomposter.com
- www.compostinfo.com
- www.composters.com/index



Getting Started

When starting, moist bedding is placed in the bin and the worms are added. Waste can be added daily or weekly. At first do not feed the worms more than half of their body weight, but after they have become adjusted they can be fed up to their full body weight. Do not add new food on top of old food until the original has been processed.

Bedding: Worms live in and feed off the bedding. Bedding must be high in carbon, loose and should mimic decaying leaves. Shredded newspaper, sawdust, hay, cardboard, burlap coffee sacks, peat moss, aged manure, or dry leaves can be used.

Temperature: Worms prefer a temperature between 55° and 70°F. The temperature cannot be below freezing (32°F) or above 89.6°F.

Food: Worms prefer a 30:1 ratio of carbon to nitrogen. Brown matter, such as shredded papers is rich in carbon. Green matter, such as food scraps, is nitrogen rich.

Suitable: Suitable food for worms includes coffee filter and grounds, tea bags, plate scrapings, rotting fruit, vegetable peels and moldy bread. Be careful to not add too much kitchen waste, and occasionally sprinkle garden soil to help the worms digest their food.

Unsuitable: Do not use high-water-content materials such as watermelon rinds or anything that has been treated with pesticides or other chemicals. Avoid adding meat scraps, bones or spiced foods like onions, garlic or salt.

Bin Maintenance: Worms need oxygen so the bin must breathe, so either remove composted material regularly, add holes to the bin or use a continuous-flow bin. Check moisture levels and oxygen flow at least once a week. Keep the pH slightly alkaline (above 7).

Feeding:

- Top feeding: organic material is placed directly on top of existing bedding and then covered with another layer of bedding. This is repeated every time the worms are fed.
- Pocket feeding: a top layer of bedding is maintained and food is buried underneath. The location of food is changed each time, rotating around the bin to give the worms time to decompose the food. The top layer is bedding is replenished as necessary.

Harvesting: Vermicompost is ready to be harvested when it contains few to no scraps of uneaten food or bedding.